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THE NORTH AMERICAN SPECIES OF CEROPALES,

WITH A CATALOGUE OF THE DESCRIBED SPECIES OF THE WORLD.

BY WILLIAM J. FOX.

CEROPALES Latr.

Ceropales Latr., Préc. caract. gen. Ins. 1796, p. 123, Gen. 25.

Labrum produced out under the clypeus. Eyes reaching, or nearly so, to the base of the mandibles. *Antennæ also in the ♀ porrect, or but little bent, generally inserted in close proximity to the base of the clypeus.** Posterior margin of the prothorax arcuate. Anterior wings with a lanceolate marginal and three submarginal cells; the second submarginal receives the first recurrent nervure beyond the middle; the third submarginal receives the second recurrent nervure before the middle. Basal vein interstitial. The cubital vein of the hind wings begins at a little distance beyond the apex of the submedian cell. *Legs armed only with minute spines or entirely spineless.* On the front legs there is no tarsal comb. Claws with a curved tooth in the middle or near the apex of their inner edge. Thorax proportionately broad and short, never emarginate. *Third ventral segment without transverse impression, sting-sheath of the ♀ projecting (Kohl.)*

I do not think this genus is entitled to family distinction, as proposed by Radoszkowski (Bull. Soc. Nat. Moscow, 1888, p. 489), founded on the genitalia of the male. The following table will aid in distinguishing the species.

FEMALES.

Body entirely black, at the most with a spot on the postscutellum and anterior orbits, white.

Posterior femora reddish **bipunctata.**

Posterior femora black **nigripes.**

Body more or less ornamented with white or yellow.

Antennæ as long, or slightly longer than head and thorax together.

Metathorax without, or with an exceedingly short, indistinct, medial sulcus.

fraterna.

Metathorax with a distinct, rather long, sulcus medially **cubensis.**

Antennæ shorter than the head and thorax.

Metathorax with a very short sulcus medially.

First abdominal segment almost entirely yellow above **Stretchii.**

First abdominal segment with the apical margin pale yellow **fulvipes.**

First abdominal segment with a large, yellow spot on each side.

longipes.

* This does not seem to apply to any of the North American species known to me, they having the antennæ situated above the clypeus at a distance which is almost equal to the length of the scape.

Metathorax with a long, distinct, medial furrow.

Second submarginal cell longer than broad, the sides of the first segment, as well as the apical margins of segments 1-5, yellow. Length 10 mm.

mexicana.

Second submarginal cell almost quadrate; abdominal segments 1-5 with a yellow spot on each side. Length 5 mm.....**femoralis.**

Body, at least the abdomen, reddish.

Head and thorax black.

Dorsulum strongly punctured; wings, except apex, hyaline.....**agilis.**

Dorsulum glabrous; wing fuliginous, a hyaline spot at apex..**Robinsoni.**

Head, thorax and abdomen reddish, with yellow markings.

Antennæ much shorter than the head and thorax together, not reaching beyond the scutellum; vertex and sides of thorax not black.

elegans.

Antennæ reaching beyond the scutellum; vertex and sides of thorax black.

Cressoni.

MALES.

Wings fuliginous; size large.

Abdomen entirely black; posterior femora reddish.....**bipunctatus.**

Abdomen with two spots on second, and the two apical segments entirely white.....**texana.**

Wings hyaline.

Body black, more or less marked with yellow.

Antennæ shorter than the head and thorax together; legs reddish.

fulvipes.

Antennæ as long as head and thorax together.

Metathorax but slightly sulcate medially; the femora, except apex, nearly always black.....**fraterna.**

Metathorax with a deep medial sulcus; the legs, except the coxæ in some species, reddish.

Front with a rather strong pit in the middle.

Face, clypeus and sides of thorax densely clothed with silvery pile; head and thorax subopaque.....**cubensis.**

Face, clypeus and mesopleuræ with sparse, silvery pile; head and thorax shining.....**albopicta.**

Front with a medial, impressed line.

Face and clypeus yellow; front finely and closely punctured; the first abdominal segment yellow laterally, as well as on the apical margin,
mexicana.

Face and clypeus yellow; front with large, shallow, separated punctures; the first abdominal segment with a large, lateral, yellow spot.
longipes.

Face and clypeus black; front with distinct, separated punctures; all the abdominal segments above with a lateral, pale yellow spot; size small.....**femoralis.**

Body, at least the abdomen, reddish.

Head and thorax black; wings, except apical margin, hyaline..**Robinsoni.**

Front and sides of the thorax black; front with large, scattered punctures.

Cressoni.

Front and sides of thorax not black; front with irregular wrinkles.

elegans.

1. ***Ceropales bipunctata* Say.**

Ceropales bipunctata Say, Long's Second Exped. ii, p. 334, 1824; Cress., Tr. Am. Ent. Soc. i, p. 138, ♀ ♂, 1867.

♀ ♂.—Black, the posterior femora, except base and apex, reddish; antennæ as long as head and thorax; wings brownish, with strong violaceous reflections; the anterior and posterior orbits, the former more broadly, separated at the vertex, a spot in the lateral angles of the clypeus, a spot on the posterior angles of the metathorax, and a line on scape beneath yellow; the anterior femora and tibiæ before tinged with rufous; the ♂ has the face, clypeus, labrum and the scape beneath, entirely yellow. Length 14—15 mm.

Occurs from Canada to Texas.

2. ***Ceropales nigripes* Cr.**

Ceropales nigripes Cress., Tr. Am. Ent. Soc. i, p. 139, ♀.

♀.—Black, subsericeous; legs entirely black, the tarsi slightly fuscous; antennæ a little shorter than the head and thorax; spot in lateral angle of the clypeus, inner orbits, not reaching the top, the posterior orbits very narrowly so, spot on scutellum, and posterior angles of the metathorax, whitish yellow. Length 13—15 mm.

Occurs in Texas, Dakota, Kansas (Snow), Washington.

3. ***Ceropales texana* Cr.**

Ceropales texana Cr., Tr. Am. Ent. Soc. iv, p. 208, ♂, 1872.

♂.—Black; face, clypeus, labrum, except a central longitudinal mark, spot between the antennæ, scape and following joint of antennæ beneath, posterior margin of prothorax above, posterior angles of the metathorax, two elongate, transverse spots on the first abdominal segment, a spot in the middle of the fifth on its posterior margin, and the sixth and seventh segments entirely whitish, or yellowish; abdomen and legs sericeous; the tarsi brownish, the anterior coxæ with silvery pubescence; a transverse excavation at base of metathorax, polished and deepest medially, from which begins a strong, short sulcus; the posterior surface of metathorax finely granulated. Length 10—12 mm.

Occurs in Texas, Colorado and Washington. The specimens before me differ from Cresson's description in having the clypeus entirely whitish yellow. This species is supposed to be the ♂ of *nigripes*.

4. ***Ceropales fraterna* Sm.**

Ceropales fraterna Sm., Catal. Hym. Brit. Mus. pt. iii, p. 180, ♀, 1856; Cr., Tr. Am. Ent. Soc. i, p. 140, ♀ ♂, 1867.

♀.—Black; head very finely punctured, the longitudinal impression on the front faint; antennæ as long as the head and thorax; anterior and posterior orbits, face, clypeus, the latter sometimes with a longitudinal medial black mark, labrum spot at base of antennæ, scape and first joint beneath, posterior margin of the prothorax, tubercles, spot on postscutellum and posterior angles of the metathorax, spot on meso-pleuræ, anterior and medial coxæ before, and the posterior coxæ behind, a transverse band before the apical margin of first abdominal segment, a band on the apical margins of segments 2—4, and segments 5 and 6

entirely, whitish, or bright golden-yellow, sometimes the band on the first segment is interrupted; wings hyaline, the apical margins narrowly fuscous, thorax rather strongly punctured, especially on the dorsum; metathorax roughened; not, or very slightly sulcate medially, with a transverse excavation at the base, which is broadened medially; femora black, the anterior and medial ones variegated with yellow and rufous, tibiae and femora reddish, sometimes the anterior and middle ones are variegated with black and yellow; abdomen smooth, glabrous. Length 5—10 mm.

♂.—Differs from the ♀ by its more slender antennae, its finely granulated metathorax, which is slightly furrowed on its basal portion, the legs reddish, the apex of the anterior and medial femora, the anterior tibiae and tarsi yellowish, the base of the anterior and medial femora black; the fascia on first segment broadly interrupted, on segments 2—4 sometimes emarginate laterally. Length 5—7 mm.

Occurs throughout the entire United States; Canada. A very variable species both in size and markings. Specimens from the far Western States show the brightest livery, it being golden-yellow; these specimens have the scutellum sometimes marked with yellow. In some of the eastern specimens the markings are almost white.

5. **Ceropales Stretchii** n. sp.

♀.—Black; face, clypeus, labrum, scape beneath, the anterior and posterior orbits, the latter narrowly so, broader towards the base of the mandibles, posterior margin of the prothorax, constricted towards the sides, tubercles, tegulae, spot on scutellum and postscutellum, large spot on posterior angles of metathorax, all the coxae in front, apical half of the anterior and medial femora, the front of the posterior pair, except base, the apex, anterior tibiae and tarsi behind, first dorsal segment of abdomen, except basal third, and the apical margins of the other dorsal segments broadly, bright yellow; the posterior tibiae and tarsi slightly reddish; front with exceedingly fine, close punctures, even more fine on the vertex and occiput; antennae shorter than the head and thorax; thorax rather strongly punctured, especially the dorsum; metathorax roughened, with a broad, transverse excavation at the base, in which there is a number of strong, longitudinal rugae, and from which begins a very short, broad sulcus, the excavation broadest medially; the scutellum also has a broad, deep excavation at its base; wings hyaline, with a slight yellowish tinge, the extreme apex fuscous; abdomen, smooth, slightly shining. Length 9—11 mm.

Occurs in California. Ten specimens bearing the MSS. name *Stretchii* Cr. The metathorax is more strongly roughened in this than in *fraterna*.

6. **Ceropales fulvipes** Cress.

C. fulvipes Cr., Tr. Am. Ent. Soc. iv, p. 208, ♀.

C. brevicornis Patt., Bull. U. S. Geol. Surv. v, p. 368, ♂.

♀.—Black, covered with sparse, silvery-sericeous pile, which is denser and brighter on the mesopleurae and coxae; face shining, microscopically punctured, the median impression distinct; antennae shorter than the head and thorax together; clypeus, anterior orbits, dilated above, narrow posterior orbits, scape

beneath, labrum, posterior margin of prothorax, a spot on each side anteriorly, spot on scutellum and postscutellum, posterior angles of metathorax, tegulæ, anterior and median tibiæ beneath, the posterior at the tip and on the outer side, the four anterior knees, a spot before the apex of the anterior tibiæ on the outer side, apical margins of abdominal segments 1—5 all lemon-yellow, the band on the first segment broadest, emarginate in the middle anteriorly, sometimes nearly interrupted medially, bands on the remaining segments uneven on their anterior edge; beneath the segments are narrowly margined with testaceous, the sides of the segments slightly rufous; wings hyaline, with a very slight yellow tinge, nervures and stigma yellowish, dorsulum with strong, sparse punctures; metathorax with a transverse excavation at the base, which is broadest medially, and from which extends a short, distinct furrow, the posterior face rather strongly depressed, rugose, the extreme lateral portion smooth; legs reddish-fulvous, the coxæ black, the posterior pair only, reddish beneath. Length 8—9 mm.

♂.—Differs from the female as follows: the antennæ are shorter; front below the antennæ entirely, second joint of antennæ beneath, the apical half of the anterior and median femora on the outer side, line on the anterior tibiæ, the first joint of the anterior and median tarsi all bright yellow; before the anterior ocellus there is a strong depression or pit, from which extends the strong median impressed line; the front has, in addition to the microscopic punctures, a number of strong, separated punctures; the prothorax is strongly and sparsely punctured, the punctures of the dorsulum slightly stronger and closer than in the female; metathorax, except the base and extreme sides, which are almost the same as the ♀, rugose, the band on the first segment of the abdomen broadly interrupted. Length 7—8 mm.

Occurs in Texas, Illinois, Kansas and Montana. Patton, in describing *brevicornis*, says "no fulvous color on posterior coxæ." This is an error, as I have examined his type; the coxæ mentioned, both in ♀ ♂, having on the side a yellow line, which is broadest at the apex; the anterior coxæ in front and a spot on the medial pair also yellow.

7. *Ceropales cubensis* Cr.

Ceropales cubensis Cress., Proc. Ent. Soc. Phila. iv, p. 132, ♀; Tr. Am. Ent. Soc. i, p. 143, ♂.

♀.—Black; orbits, the anterior pair broadest, face, clypeus, labrum, first two joints of antennæ beneath, posterior margin of the prothorax, and a spot on each side anteriorly, small round spot on scutellum and a transverse one on postscutellum, small spot at posterior angles of metathorax, first joint of median tarsi, a sublunate spot on each side of the first abdominal segment, a narrow band on the apical margins of the remaining segments produced into a large spot laterally, all pale yellow; the fascia on the second segment broadly interrupted medially; dorsulum strongly and sparsely punctured, the punctures more compact in two longitudinal depressions, which are broadest towards the scutellum; metathorax with a somewhat triangular, deep, shining excavation at the basal middle, from which extends a strong furrow, which is twice as long as in any of the preceding species, the rest of the metathorax is microscopically punctured; the coxæ, metathorax, sides of the scutellum, face and the clypeus, with

silvery pile; wings hyaline, nervures black, stigma yellowish; tegulæ brownish; antennæ longer than head and thorax together; legs reddish, the anterior and medial coxæ black, the anterior pair with a yellow spot in front; posterior tarsi with the apex of the tibiæ fuscous. Length 8—9 mm.

♂.—Differs from the ♀ as follows: the anterior tibiæ and the tarsi pale yellowish, all the coxæ rufous, with the exception of a yellow spot on the anterior and medial pair yellow, as in the female; fascia on the second and third abdominal segments interrupted medially. Length 6 mm.

Cuba; Jamaica (Fox, April, 1891); San Domingo. Specimens from the latter locality have a spot on the clypeus medially, the posterior coxæ, and the posterior tibiæ and tarsi black. The stigma of the wing also black.

8. *Ceropales mexicana* Cress.

Ceropales mexicana Cress., Proc. Boston Soc. Nat. Hist. xii, p. 377, ♂ ♀, 1869.

♀.—Black; face, clypeus, labrum, except the medial portion, spot between the antennæ, anterior and posterior orbits, the anterior ones broadly so, spot on the scape at the apex beneath, spot on the underside of following joint, posterior margin of prothorax, spot on the shoulders, and on the scutellum and postscutellum, a spot on the posterior angles of the metathorax, the apical margin of the dorsal segments 1—5, and the sixth almost entirely, an irregular mark on the sides of the first segment, emarginate on its inner margin, all yellow; the yellow on the apical margin of the first segment not connected with the lateral marks; the bands on the other segments emarginate on each side; antennæ as long as, or very slightly shorter than the head and thorax; front microscopically punctured, impressed medially; a deep, somewhat curved pit before the anterior ocellus; vertex with rather large, sparse punctures; prothorax and dorsulum strongly and sparsely punctured, the punctures more compact in two longitudinal depressions on the dorsulum; metathorax with a transverse excavation at the base, which is broadest and shining medially, from which begins a strong, long, furrow, which is stronger on the basal portion; the rest of the metathorax finely granulate, the sides nearly smooth; wings with a slight yellowish tinge, faintly dusky at apex, nervures brownish, stigma yellowish; tegulæ brown; legs, except coxæ, bright fulvous; four anterior coxæ beneath, two lines forming an angle at the apex on the outer side, and a spot at the apex yellow; face, clypeus, cheeks, metathorax posteriorly, mesopleuræ and the coxæ with silvery pubescence. Length 11 mm.

♂.—Differs from the ♀ as follows: first two joints of the antennæ entirely, and the base of the third yellow beneath; labrum entirely yellow; the anterior tibiæ and tarsi more or less yellow; the lateral marks on the first abdominal segment confluent with the band on the apical margin. Length 9—10 mm.

Orizaba, Mexico.

9. *Ceropales albopicta* Cress.

Ceropales albopicta Cress., Proc. Bost. Soc. Nat. Hist. xii, p. 378, ♂.

♂.—Differs from *mexicana* as follows: antennæ slightly longer than the head and thorax; front, above the base of the antennæ, with a distinct pit, which is connected with the pit before the anterior ocellus by a faint impressed line;

vertex impunctate, glabrous; prothorax impunctate, dorsulum with a few scattered, large punctures; the medial furrow of the metathorax is much broader, but hardly as long as in *mexicana*; wings hyaline, iridescent, the tips slightly fuscous. the ornamentation is yellowish white, abdomen glabrous, the first segment with a large spot on each side, the other segments marked as in *mexicana*. Length 7--8 mm.

Orizaba, Mexico. This species is more shining than *mexicana*.

10. ***Ceropales femoralis*** Cress.

Ceropales femoralis Cress., Proc. Bost. Soc. Nat. Hist. xii, p. 378. ♀.

♀.—Black, shining; antennæ thick, slightly shorter than head and thorax; face, clypeus, coxæ, mesopleuræ and the apical portion of the metathorax silvery; anterior orbits broadest above the antennæ, narrow posterior orbits, clypeus, except the middle portion, scape beneath, spot on the underside of second antennal joint, posterior margin of prothorax, spot on each shoulder, spot on scutellum and postscutellum, posterior angles of metathorax, all pale yellow; anterior and medial legs brownish, the coxæ and trochanters black, spot on anterior coxæ beneath, spot at tip of four posterior ones, and knees of the four anterior legs, pale yellow; the posterior femora, except the base, reddish; the tibiæ and tarsi entirely black; all the abdominal segments with a lateral, sublunate, white mark on the apical margin; wings hyaline, iridescent, dusky toward the apex, second submarginal cell subquadrate, receiving the first recurrent nervure a little before its middle, the third submarginal cell narrowed one-third towards the marginal, receiving the second recurrent nervure at about the middle. Front scarcely impressed medially; a pit before the anterior ocellus, the posterior ocelli each with a depression on the outer side; thorax strongly and sparsely punctured, especially the dorsulum, which has a strong impressed line on each side near the tegulæ; metathorax finely rugose, or with fine transverse striæ, deeply furrowed, the sulcus reaching to about the centre of metathorax and broadened at the base into a not very distinct excavation; tegulæ brownish

♂.—Differs from the ♀ by having the frontal impression distinct; the head and thorax more or less silvery, more strongly punctured; antennæ as long as the head and thorax; the metathorax with a strong, somewhat triangular excavation at the base, and the clypeus, scutellum and posterior angles of the metathorax are without trace of yellow. Length 5 mm.

Orizaba, Mexico; Colorado, Washington. Three specimens from the United States and the type from Mexico. The former differ from the type in having all the legs reddish and the scutellum and posterior angles of metathorax not spotted with yellow. Otherwise I can see no difference between the type from Mexico and those from the United States.

11. ***Ceropales longipes*** Sm.

Ceropales fasciata Say, Long's Second Exped. ii, p. 333 (nec. Fabr.)

Ceropales longipes Sm., Brit. Mus. Catal. iii p. 179, pl. iv, fig. 2; Walsh, Amer. Entom. i, p. 163, ♂, 1869.

Ceropales frigida Sm., Brit. Mus. Catal. iii, p. 180.

♀.—Black; clypeus, labrum, sides of face, broad anterior and narrow posterior

orbits, spot between the antennæ, two basal antennal joints beneath, posterior margin of prothorax, a spot on each shoulder, a short line in centre of dorsulum posteriorly, small spot on scutellum, and a transverse one on postscutellum, posterior angles of metathorax, spot on mesopleuræ above the middle coxæ, anterior coxæ in front, spot on apical portion of medial coxæ in front and a line on the posterior coxæ on the outer side, and a spot at its apex, all pale yellow; antennæ much shorter than the head and thorax together; front with a distinct median impressed line, microscopically punctured, and with large, sparse punctures mingled with the finer punctures; in front of the anterior ocellus and on each side of the posterior pair there is a strong depression or pit, the anterior one most distinct; the space within the ocelli with strong, separated punctures; thorax with strong, sparse punctures, more abundant on the dorsulum, the punctures more compact in two longitudinal depressions on the latter; metathorax with a polished, somewhat triangular excavation at the base medially, from which originates a short, deep sulcus; the rest of the metathorax, except the sides, which are glabrous, rugoso-punctate, together with the mesopleuræ and coxæ, with sparse silvery pubescence; tegulæ testaceous; wings hyaline, the apical margin fuscous; legs reddish fulvous, the anterior and medial more or less variegated with yellow; the extreme base of the posterior tarsal joints black; abdomen shining, the first segment with a yellow spot on each side, the four following segments with their apical margins yellow, interrupted medially, broadly emarginate on each side, and enlarged at their lateral ends into an ovate spot: "sixth segment with a large, yellow spot, nearly occupying the whole segment in one specimen; venter immaculate (this segment is lacking in the specimen before me)." Length 7 mm.

♂.—Differs from the ♀ as follows: antennæ as long, or a little longer than the head and thorax together; front below the antennæ entirely, first two antennal joints and part of the third beneath, the greater part of the medial and posterior coxæ yellow? (in the specimen before me these parts are rufous, probably due to an overdose of cyanide); posterior tarsi not, or very indistinctly ringed with black at the base of the joints; the excavation at base of metathorax larger, and the medial sulcus a little longer than in the ♀. Length 8 mm.

Florida, Illinois (Cresson); Canada (Prov.). A ♂ from Georgia. The posterior legs of this species are no longer than in most of the species before me which equal it in size.

12. *Ceropales agilis* Sm.

Ceropales agilis Sm., Journ. of Entom. ii, p. 269, ♀.

♀.—Black, the abdomen ferruginous, fuscous at the base; sides of the clypeus, margin of the labrum narrowly, anterior orbits broad above the antennæ, sides of face, spot between the antennæ, first two antennal joints beneath, posterior orbits narrowly, posterior margin of prothorax, spot on the shoulders, small spot on the scutellum and a transverse one on the postscutellum, posterior angles of the metathorax, whitish yellow; front, metathorax, mesopleuræ and coxæ with silvery pubescence; wings fusco-hyaline, nervures black; tegulæ brownish; antennæ slightly longer than the head and thorax together; front depressed, with sparse, rather strong punctures, with a distinct medial impressed line; before the front ocellus there is a transverse pit or excavation; thorax strongly

and sparsely punctured, especially the dorsulum and sides; metathorax with a transverse excavation at the base, which is much broader and somewhat triangular, polished medially; from this point there begins a long, distinct sulcus, the sulcus ending between two depressions on the apical portion, the metathorax strongly punctured laterally, the medial portion with microscopic punctures, shining; the metapleuræ smooth, polished; legs ferruginous, the coxæ black, the anterior pair in front and a spot at the tip of the median and posterior pair pale yellow. Length 7—8 mm.

Mexico; Orizaba (Sumichrast). Two specimens before me have no trace of a series of very short, fine striæ at the anterior margin of the dorsulum mentioned by Smith, and have on the abdomen a small yellow spot on the sides of the first and a larger spot on the sixth segment. The apical margins of the segments testaceous.

13. **Ceropales Robinsonii** Cress.

Ceropales Robinsonii Cr., Tr. Am. Ent. Soc. i, p. 140, ♂, 1867, fig. 15.

Ceropales rufiventris Walsh, Amer. Entom. i, p. 163, ♀ ♂, 1869, fig. 108.

Ceropales superba Prov., Faun. Ent. Can. p. 810, ♀, 1883.

♀.—Black, abdomen ferruginous; clypeus, except an oblong, medial spot, labrum, mandibles, sides of face, anterior orbits broadly, the posterior orbits narrowly, spot between the antennæ, first two antennal joints beneath, posterior margin of prothorax, emarginate in the middle anteriorly, spot on the shoulders, spot on postscutellum and posterior angles of metathorax all yellow; the first two antennal joints above rufous; tegulæ brown; wings fuliginous, with a violaceous reflection, apical half of the marginal cell, the upper half of the third submarginal and the fourth submarginal entirely hyaline; antennæ as long, or slightly longer than the head and thorax together; head and thorax glabrous, impunctate; the front with a strong medial impressed line; dorsulum with two longitudinal depressions; metathorax with a transverse excavation at base, broadest medially, from which begins a long, deep, medial sulcus; the suture between the meso- and metapleuræ foveolate; front, the thorax on sides and beneath with silvery pubescence; legs ferruginous, the anterior and median coxæ black, the former in front, and a spot at tip of the latter at the tip of the posterior pair black at the base; the apical margin of the abdominal segments yellowish testaceous. Length 7—8 mm.

♂.—Antennæ longer than the head and thorax together; clypeus and face entirely, spot on dorsulum posteriorly, on scutellum, on the mesopleuræ, above the medial coxæ, and a small spot on the abdominal segments 2—5 laterally, all yellow; the knees, the apex of the tibiæ and the tarsi yellowish; wings subhyaline, paler at the same place where the ♀ has the wings hyaline. Length 6—7 mm.

Occurs from Canada to Virginia, westward to Illinois. I have united with this species *rufiventris* and *superba*. The description of the former agrees in every particular with this species. The description of *superba* also agrees with this species, except that the hyaline spot on anterior wings is not mentioned.

14. *Ceropales elegans* Cress.

Ceropales elegans Cr., Tr. Am. Ent. Soc. iv, p. 208, ♀; Patton, Bull. U. S. Geol. Surv. v, p. 367, ♂.

♀.—Ferruginous, with a silvery-sericeous pile, more dense on the metathorax, coxæ and abdomen; face, clypeus, labrum, broad anterior orbits, narrow posterior orbits, spot between the antennæ, posterior margin of the prothorax rather broadly, spot on the shoulders, tegulæ, rounded spot on scutellum, transverse spot on postscutellum, spot at apex of metathorax medially, the posterior angles, a line extending obliquely some distance on the metapleuræ, beginning at the posterior angles, broad apical margins of dorsal segments 1—3, the segments 4—6 entirely, all yellowish; the bands on the two basal segments uneven anteriorly; wings yellow-hyaline, extreme tips fuscous; legs ferruginous, anterior coxæ beneath, spot on medial pair, line on the posteriors and a spot at the apex, the knees and tips of medial femora yellow; antennæ reaching to the scutellum, the last three joints black; front scarcely impressed, together with the vertex with irregular, confluent wrinkles or striæ; dorsulum with much finer wrinkles and a few punctures, with a raised longitudinal line medially, and an impressed line on each side near the tegulæ, between the raised line and each of the impressed ones, the dorsulum is depressed; metathorax with a large, transverse-triangular excavation at the base, which is black and polished in the middle; from this excavation there begins a strong sulcus, which extends to the base of the yellow spot at apical middle; on each side of this yellow spot there is a dark, somewhat shining depression; each of these depressions have several transverse striæ, the rest of the metathorax is smooth, subopaque. Length 10—11 mm.

♂.—Differs from the ♀ as follows: antennæ as long as the head and thorax together; front with a distinct, medial, impressed line, smooth, with the exception of a few shallow punctures; first two joints of the antennæ, the anterior tibiæ, spot at base and apex of medial pair and the basal joint of anterior tarsi yellow; the dorsulum and metathorax with strong, sparse punctures, more distinct on the dorsulum. Length 10 mm.

Occurs in Texas, Kansas (Patton). The sutures of the thorax in both sexes are fuscous.

15. *Ceropales Cressoni* n. sp.

♀.—Ferruginous; two elongate, parallel marks on the front connected with a larger transverse mark on the vertex, apical three joints of the antennæ, the dorsulum anteriorly, suture between the dorsulum and scutellum, sides of the scutellum and postscutellum, base of metathorax, pectus, mesopleuræ, except a spot over the middle coxæ, anterior portion of metapleuræ and the second segment of the abdomen medially, all black; face, clypeus, spot between the antennæ, broad anterior orbits, labrum, mandibles except apex, which is black, narrow posterior orbits, posterior margin of prothorax above and on the sides, spot on the shoulders, tegulæ, rounded spot on scutellum, transverse spot on postscutellum, posterior angles of metathorax, spot at the apex, medially, the apical margin of dorsal segments 1—4, the yellow on segments one and two uneven anteriorly, and segments 5 and 6 entirely, all yellow, that on the clypeus, orbits and labrum almost white; legs ferruginous, the anterior coxæ in front, spot on the medial pair, a line on the posterior pair laterally, the knees and apex

of anterior and medial tibiæ all yellow; front distinctly impressed medially, with a few shallow punctures; in front of the anterior ocellus is a distinct depression or pit; antennæ reaching to the postscutellum; the dorsulum as in *elegans*, except that it is covered with large, shallow, separated punctures, and the impressed line near the tegulæ is not distinct; metathorax with a transverse excavation at the base, only a little broader medially, the medial sulcus short, not more than half as long as in *C. elegans*, otherwise the metathorax is the same; wings yellow-hyaline, the apex dusky. Length 9 mm.

♂.—What I take to be the ♂ differs from the ♀ as follows: antennæ as long as the head and thorax together, entirely ferruginous, except the first two joints beneath, which are yellow; the black on the front and vertex amalgamated into one large spot; a spot behind each shoulder, the anterior coxæ behind, the mesopleuræ and metathorax, except a large blotch on the latter laterally and the posterior angles all black; front with a few scattered, shallow punctures, with a rather deep pit medially and more shallow one before the anterior ocellus; the dorsulum with large separated punctures, the depressions very slight; the metathorax laterally with strong sparse punctures, the apical half, medially, finely granulate; the anterior tibiæ in front and the first joint of the middle tarsi yellow; abdomen entirely ferruginous, in some specimens segments 2–4 having the apical margin narrowly emarginate on each side anteriorly, and segments 5–7 with a spot medially yellow, the spot on the seventh segment small. Length 8–10 mm.

Described from one ♀ and six ♂ specimens. The ♀ is from Nebraska, and all the males are from Washington. The black on the front and the sides of the thorax will separate this species from *elegans*.

UNIDENTIFIED SPECIES.

16. *Ceropales minima* Prov.

Ceropales minima Prov., Add. Hym. Quebec, p. 265, ♂ (published in Le Nat. Can. xvii, 6).

“♂.—Length .18 inch. Black, with pale yellow spots. The face below the antennæ, the orbital lines to the top of the eyes, the clypeus, labrum, the first two joints of the antennæ beneath, the posterior border of the prothorax, a spot on its anterior angles, the scutellum and postscutellum with a double spot on the inferior angles of the metathorax, a spot in front of the four anterior coxæ, the apex of the posteriors with a line externally, a large spot on the sides of the segments 1 and 2 of the abdomen, with two spots at the end of the beak (bec) pale yellow. Wings slightly obscure at the extremity, the stigma ferruginous. Legs pale yellow, all the femora black, except the apex, the posterior legs entirely black, their tibiæ and tarsi ferruginous, brownish at the apex. Abdomen oval-oblong, polished, brilliant.

“Hull (Guignard).”

17. *Ceropales clypeatus* Cress.

Ceropales clypeatus Cr., Proc. Ent. Soc. Phila. iv, p. 133, ♀, 1863.

"Black; most of the clypeus, palpi, posterior margin of the prothorax and the tegulæ yellowish-white; legs ferruginous; wings whitish hyaline, with a pale fuscous cloud near apex."

"*Female*.—Black, opaque; face silvery in certain lights; clypeus yellowish-white, with a square black spot on the basal middle; palpi whitish; antennæ blackish, the basal joint beneath dull ferruginous. Thorax: posterior margin of the prothorax entirely yellowish-white; metathorax black, rather shining, rounded behind; tegulæ yellowish-white. Wings whitish hyaline, slightly iridescent, with a small pale fuscous cloud covering the marginal, and the second and third submarginal cells: nervures black. Legs long, especially the posterior pair, and including their coxæ ferruginous, the posterior tarsi fuscous, tibial spurs white. Abdomen oblong-ovate, piceous-black, immaculate, the basal segment tinged with obscure ferruginous. Length 3 lines (6 mm.); expanse of wings 5 lines (10 mm.)."

"Coll. Dr. J. Gundlach. One specimen, Cuba."

Catalogue of the Described Species of Ceropales.

1. *Ceropales abdominalis* Tasch., New Friburg, Brazil.
C. abdominalis Tasch., Zeits. f. d. gesamm. Nat. Sachs. u. Thüringen, xxxiv, 1869, p. 73.
2. *Ceropales abnormis* Tasch., Rio Janeiro.
C. abnormis Tasch., Zeits. f. gesamm. Nat. Sachs. u. Thüring, xxxiv, p. 75.
3. *Ceropales agilis* Sm., Mexico.
C. agilis Sm., Journ. of Entom. ii, p. 269.
4. *Ceropales altaica* Morewitz, Semipalatinsk.
C. altaica Mor., Hor. Soc. Ent. Ross. xxii, p. 272.
5. *Ceropales annulitarsis* Cam., India.
Proc. Manchester Lit. and Philo. Soc. ser. 4, iv, p. 434, 1891.
6. *Ceropales anomalipes* Shuck, Brazil.
C. anomalipes Shuck, Tr. Ent. Soc. Lond. ii, p. 70.
7. *Ceropales bifasciata* Rads., Angola.
C. bifasciata Rads., Journ. Sci. Lisboa, viii, p. 214.
8. *Ceropales bipunctata* Say, United States.
Ceropales bipunctata Say, Narr. Exp. St. Peter's R. App. p. 69.
9. *Ceropales bogdanovi* Rads., Turkestan.
C. bogdanovi Rads., Fedtckenko's Puteshestvie v. Turkestan, Pl. vi, fig. 9, p. 13.
10. *Ceropales chilensis* Spin., Chili.
C. chilensis Spin., Gray's Chili, vi, p. 391.
11. *Ceropales claripennis* Cam., India.
C. claripennis Cam., Proc. Manchester Lit. and Philo. Soc. ser. iv, vol. iv, p. 433, 1891.
12. *Ceropales clypeatus* Cr., Cuba.
C. clypeatus Cr., Proc. Ent. Soc. Phila. iv, p. 133.

13. *Ceropales crassicornis* Sm., Ega, Brazil.
C. crassicornis Sm., Journ. of Entom. ii, p. 269.
14. *Ceropales crassicornis* Sm., Para, Brazil.
C. crassicornis Sm., Ann. Mag. N. H. (4), xii, p. 51.
15. *Ceropales Cressoni* Fox (see above), Nebraska, Washington.
16. *Ceropales cribrata* Costa., Palermo.
C. cribrata Costa., Faun. Nap. Pompilidei, p. 43, Pl. viii, bis, fig. 3.
17. *Ceropales cubensis* Cr., Cuba; Jamaica; San Domingo.
C. cubensis Cr., Proc. Ent. Soc. Phila. iv, p. 132.
18. *Ceropales Destefanii* Costa., Sicily.
C. Destefanii Costa., Att. Acc. Napoli (2), iii, Pl. i, fig. 14, p. 31.
19. *Ceropales elegans* Cr., Texas, Nebraska.
C. elegans Cr., Tr. Am. Ent. Soc. iv, p. 208.
20. *Ceropales fasciata* Fabr., Europe.
Ichneumon fasciator Fabr., Spec. Ins. i, p. 430.
Evania fasciata Fabr., Ent. Syst. ii, p. 193.
Ceropales fasciata Fabr., Syst. Piez., p. 186; Lep. St. Farg. Hym. iii, p. 467.
21. *Ceropales flavopicta* Sm., India.
C. flavopicta Sm., Cat. Hym. Brit. Mus. Pt. iii, p. 178.
22. *Ceropales fraterna* Sm., United States; Canada.
C. fraterna Sm., Catal. Hym. Brit. Mus. Pt. iii, p. 181, ♀; Cress., Tr. Am. Ent. Soc. Phila. i, p. , 1867, ♀ ♂.
23. *Ceropales fulvipes* Cr., Texas, Kansas, Mont.
C. fulvipes Cr., Tr. Am. Ent. Soc. iv, 208, ♀.
C. brevicornis Bull. U. S. Geol. Surv. v, p. 368, ♂.
24. *Ceropales fuscipennis* Sm., India.
C. fuscipennis Sm., Cat. Hym. Brit. Mus. Pt. iii, p. 179.
25. *Ceropales helvetica* Tourn., Geneva.
C. helvetica Tourn., L' Ent. Gen. i, p. 40.
26. *Ceropales histrio* Fabr., Europe.
Evania histrio Fabr., Ent. Syst. Suppl. p. 24.
Evania albicincta Rossi, Faun. Etrusc. ii, p. 84.
Ceropales histrio Fabr., Syst. Piez. p. 186.
Pompilus festinus Panz., Faun. Germ. p. 106.
Pompilus histrio Illig. Ed. Faun. Etrusc. ii, p. 84.
27. *Ceropales intermedia* Magretti, Lombardy.
C. intermedia Magretti, Bull. Ent. Ital. 1886, p. 402.
28. *Ceropales irregularis* Sm., Para, Brazil.
C. irregularis Sm., Ann. Mag. N. H. (4), xii, p. 52.
29. *Ceropales Kriechbaumeri* Magretti, Suakim.
C. Kriechbaumeri Magretti, Ann. Mus. Genov. (2), i, p. 571.
30. *Ceropales longipes* Sm., United States.
C. fasciata Say (nec. Fabr.), Narr. Exped. St. Peter's R. App. p. 68.
C. longipes Sm., Cat. Hym. Brit. Mus. Pt. iii, p. 179.
C. frigida Sm., l. c. p. 180.
31. *Ceropales luctuosus* Sm., Ega, Brazil.
C. luctuosus Sm., Journ. of Entom. ii, p. 269.
32. *Ceropales lugubris* Sm., Santarem, Brazil.
C. lugubris Sm., Ann. Mag. N. H. (x), xii, p. 52.

33. *Ceropales maculata* Fabr., Europe.
Evania maculata Syst. Ent. p. 345.
Sphex rustica Müller, Prod. Zool. Dan. p. 161, 1776.
Ichneumon multicolor Fourc., Ent. Par. ii, p. 404.
Pompilus frontalis Panz., Faun. Germ. p. 72.
Ceropales maculata Latr., Hist. Nat. Crust. et Ins. xiii, p. 283, No. 1; Lepel.
 St. Farg. Hym. iii, p. 465.
Ceropales major Costa Atti Accad. Napol (2), iii, No. 2 (= var.).
34. *Ceropales minima* Prov., Canada.
C. minima Prov., Add. Hym. Quebec, p. 265.
35. *Ceropales mlokosewitszi* Rads., Caucasus.
C. mlokosewitszi Rads., Bull. Soc. Imp. Nat. Moscow, 1888, p. 491.
36. *Ceropales nigra* Rads., Turkestan.
C. nigra Rads., Fedtchenko's Puteshestvie v. Turkestan, Pl. vii, fig. 10, p. 14.
37. *Ceropales nigripes* Cr., Western United States.
C. nigripes Cr., Tr. Am. Ent. Soc. i, p. 139, 1867.
38. *Ceropales nigripes* Tasch., New Friburg, Mendoza.
C. nigripes Tasch., Zeits. f. gesamm. Nat. Sachs. u. Thür. xxxiv, p. 74, 1869.
39. *Ceropales nigripes* Costa, Eur. Piedmont.
C. nigripes Costa, Rend. Acc. Napol. xxv, p. 282, 1886.
40. *Ceropales nigripes* Costa, Italy.
C. nigripes Costa, Att. Acc. Napol. (2), iii, p. 33, 1889.
41. *Ceropales nigrita* Tournier, Europe.
C. nigrita Tourn., L' Ent. Gen. i, p. 39.
42. *Ceropales orientalis* Cam., India.
C. orientalis Cam., Proc. Manchester Lit. and Philo. Soc. ser. 4, iv, p. 432, 1891.
43. *Ceropales ornata* Sm., India.
C. ornata Sm., Catal. Hym. Brit. Mus., Pt. iii, p. 179.
44. *Ceropales pedestris* Sm., Para, Brazil.
C. pedestris Sm., Ann. Mag. N. H. (4), xii, p. 52.
45. *Ceropales picta* Shuck., Cape of Good Hope.
C. picta Shuck., Tr., Ent. Soc. Lond. ii, p. 70.
46. *Ceropales pygmæa* Kohl, Botzen.
C. pygmæa Kohl., Verh. zool.-bot. Ges. Wien, xxix, p. 402.
47. *Ceropales Robinsonii* Cr., W. Va., Ill., Mass.
C. Robinsonii Cr., Tr. Am. Ent. Soc. i, p. 140, fig. 15, 1867.
C. rufiventris Walsh, Am. Entomologist, i, p. 163.
C. superba Prov., Faun. Nat. Can. xiv, p. 36.
48. *Ceropales sibirica* Rads., Siberia.
C. sibirica Rads., Bull. Mosc. 1888, p. 490.
49. *Ceropales Solskii* Rads., Turkestan.
C. Solskii Rads., Fedtchenko's Puteshestvie v. Turkestan, Pl. vi, fig. 8, p. 13.
50. *Ceropales texana* Cr., Tex., Washington.
C. texana Cr., Tr. Am. Ent. Soc. iv, p. 208.
51. *Ceropales tricolor* Arr., Buenos Aires.
C. tricolor Arribalzaga, El Naturalista Argentina, i, [1878], p. 322.
52. *Ceropales trimaculata* Tasch., Lagoa Santa.
C. trimaculata Tasch., Zeits. f. gesamm. Nat. Sachs. u. Thüring, xxxiv, p. 74.

53. *Ceropales tristis* Tourn., Europe.*C. tristis* Tourn., L' Ent. Gen. i, p. 39.54. *Ceropales variegata* Fabr., Europe.*Evunia variegata* Fab., Ent. Syst. Suppl. p. 241.*C. variegata* Latr., Hist. Nat. Crust. et Ins. xiii, p. 284; Lep. St. Farg. Hym. iii, p. 466, tab. 33, fig. 2.

Since the preceding paper was presented for publication, the following new species have been described :

C. azteca Cam., Mexico, Yucatan.*C. azteca* Cam., Biol. Centr.-Amer. Hym. ii, p. 159; tab. x, fig. 2.**C. fumipennis** Cam., Panama.*C. fumipennis* Cam., l. c. p. 160; tab. x, fig. 3.**C. chiriquensis** Cam., Panama.*C. chiriquensis* Cam., l. c. p. 160; tab. x, fig. 4.**C. apicipennis** Cam., Mexico.*C. apicipennis* Cam., l. c. p. 161; tab. x, figs. 5, 5a.

A Revision of the North American species of PHLEPSIUS.

BY EDWARD P. VAN DUZEE.

Genus *Phlepsius* includes a series of the Jassidæ distinguished from their allies by having their elytral areoles more or less densely reticulated with slender, simple or ramose, brown lines. As a rule they are rather large in size, with stout, rather convex bodies. A head as wide as, or somewhat narrower than the pronotum. The vertex is generally obtusely angled, and from one-fifth to one-third longer on the middle than next the eye; face hexagonal in form, the edge slightly excavated below the eyes; front intermediate in form between that of *Thamnotettix* and *Athysanus*. Elytral neuration simple, like that of *Thamnotettix*, the reticulations being mere pigment lines, not nervures.

The head, pronotum and scutellum, are generally variegated, or irrorate with fulvous-brown and pale, the colors paler and the irrorations more obscure on the scutellum and anterior margin of the pronotum. Below the colors are tawny, with fuscous clouds and spots on some of the pleural and sternal pieces, and the venter is usually irrorate, with a pale median line. Tergum fuscous, with a broad, pale margin. Legs twice banded on the anterior and intermediate femora, and with all the tibiæ dotted at the base of the spines. Elytra generally whitish, clouded more or less with pale fulvous-brown or testaceous, the colors sometimes arranged in transverse bands, where the reticulations will then be segregated; ner-